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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Fri., Dec. 2,/27

Livestock and Dairy Meeting No. 9.

SUBJECT: The Farm Hog.

ANNOUNCEMENT: Every Monday, Wednesday, and Friday our farm club meets here in the old schoolhouse. Friday is our day to talk about either livestock or dairy questions. One week we discuss dairy and the next we discuss livestock. To-day is the day for livestock. Judging by the crowd around the Department of Agriculture man over there, the talk has already started --- Let's get in on it -----

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HOWELL: But I tell you, the hogs on my farm are supposed to be the same breed as those on that hog-breeder's place --- and also the same kind as those Sid Woods feeds on his place ----

EXPERT: Well? ----

HOWELL: You'd hardly guess it to look at them.

EXPERT: Probably not. There are striking differences in the appearance of hogs on different types of farms.

HOWELL: I'll say there are. When I started raising hogs on my farm I bought good stock -- stock that was supposed to be the same as these feeders and breeders are keeping. Now mine are most all different sizes, shapes or colors.

EXPERT: That's bad.

HOWELL: Yes, but you go on that hog-breeder's place -- and you can hardly tell the hogs apart. They all look the same size, and color, and type. They don't look too fat and they don't look too thin. They all seem to be thrifty, active, upstanding, and well-marked individuals --- their condition seems good at all times ----

EXPERT: You found them kept in quarters and pasture lots that showed care and consideration for the quality of the hogs, too, did you not? You found the boars and sows in suitable, well-fenced enclosures ---

HOWELL: W-well, yes. But you can't explain the difference that way ---

EXPERT: You found the young boars and gilts kept separated in pasture fields. Their well-developed bodies showed that they had been fed for steady growth.

HOWELL: Of course, those things show them up better; but chances are the culls, the "roughs" and the off-type pigs were being fed out in some out-of-the-way place on the farm.

EXPERT: Maybe so. At least, you will admit they were not in plain view. And the greater the skill of the breeder and the better the class of hogs, the fewer culls and misfits there will be to hide. My point is, that you don't get results like that through an original stocking up with good hogs, mating them and feeding out the pigs only, but it takes painstaking care in the selection of the animals for mating, constant regard for rations that will perfectly supply the requirements of breeding animals, bred sows, nursing sows, suckling pigs and growing shotes. That breeder has an ideal before him and in constantly trying to reach it, he gets uniformity in the type of his breeders.

HOWELL: But the hogs on the breeder's place were different from those on the feeder's farm.

EXPERT: Yes, I guess the growing pigs looked more rangey and had less fat than those of the same age on the feeder's farm. On the hog-feeder's farm the purpose is to feed out well-grown, rangey, active pigs to market weight and do it economically. Those fattening hogs, I suppose, showed that every effort was being made to produce quick gains. The feeding system is planned to produce the best growth of carcass on young pigs with the minimum of feed to supplement the pastures and to secure the greatest gains during the finishing period through heavy feeding. You found the equipment and management practices were well designed, did you not? And that close attention was given to details for safeguarding the health of the hogs ---

HOWELL: Yes, But, of course, hog feeders and hog breeders keep more hogs than we do on a general farm. I guess that's the real answer. We could have uniform hogs, too, if we made hog raising the main thing.

EXPERT: It's true that hogs constitute only a minor part of farm activities in a general farming business; but they do represent considerable investment. They need more or less daily attention. They consume feed and they represent an asset or liability, depending on a number of things. On many farms, the hogs are no distinct breed. That doesn't seem to be your trouble. You are like a number of other general farmers I know. From what you say, I gather that your practices are not nearly so good, as a rule, as they are on that hog-breeder's farm or that hog-feeder's farm. You probably feed your bred sow as a hog and not as a prospective mother of a litter of pigs. At farrowing time and during the suckling period, you just do the feeding as a routine job -----

HOWELL: I'll let you know, I feed my hogs well --- I give them plenty.

EXPERT: Most farmers usually do give plenty of feed. But do you seriously consider the quality of the feed or the completeness of the feed?

HOWELL: I've marketed some big, fat hogs ---

EXPERT: Yes, but did you fatten them economically? Did you feed them so they would pay? On general farms I've often seen pigs which seemed to be all different sizes and ages. Too many farmers observe no definite breeding season. On such farms, too, you often find newly farrowed pigs, weanlings, half-grown shotes, and fattening hogs together. Too often they are all fed alike with improperly balanced rations. Growing pigs needing plenty of protein are too often fed the same feed that is being used to fatten the mature hogs. Equipment is often inadequate and inappropriate. Sanitation is frequently faulty. The cost of producing pork under general farm conditions is probably greater than it is on most hog farms. Often the cost is higher per pound than the market price of pork. The method of feeding, however, disguises actual costs, and profits from hogs under certain circumstances are questionable.

I want all you men doing a general farm business to understand that hogs are profitable farm animals when they receive intelligent care and attention. But the type of general farm hog should be improved. You should establish purebred herds, if possible. At any rate, you should at least grade up your herd with purebred sires of good quality.

You should give the growing pigs more protein feed than is ordinarily fed on the average farm. You should also use more protein in the ration of bred sows. You should schedule your breeding operations so as to bring about uniformity in the age of the various litters --- that will make feeding and handling easier. You should also look after sanitation carefully and also see that your pigs are protected against disease.

Profits from hogs should be much bigger than they are now on the general farmer's farm. The same amount of feed many of you are now using will produce more desirable meat for your family and for market -- when you give more attention to feeding. The extra feed needed to produce undesirably fat hogs, when fed to a larger number of pigs, will result in more meat of better quality and still supply you with plenty of lard for home use.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U.S. RADIO FARM SCHOOL — Monday, Dec. 5.

(NOT FOR PUBLICATION)

Crops and Soils Meeting No. 10.

SUBJECT: Soil Erosion.

ANNOUNCEMENT: We meet here in the old school house three times a week; Mondays, Wednesdays, and Fridays. Monday is our day to talk over crop and soil problems. We just swap experiences, and sometimes that Department of Agriculture man over there gives us some expert advice. These club meetings of ours are informal like -- there's the expert talking over there now -- Let's see what the argument is about -----

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BROWN: You mean to say, it's worse than earthquakes?-----

EXPERT: Much worse ----

BROWN: Worse than tornadoes?

EXPERT: Certainly. Volcanoes, earthquakes, tidal waves, and tornadoes have a small effect in comparison to soil erosion. Why, don't you know, that there are 125 billion pounds of plant food washed off of farm lands and pastures in the United States every year. That means that there is at least 200 million dollars washed out of the pockets of the farmers of this country every year.----

BROWN: Whew, I didn't know it was that bad. I've always heard that over in China there has been considerable damage from soil washing away ---

EXPERT: Yes, that's true, Brown --- but you don't have to go to far-off China for examples of the wastefulness of soil erosion. We have plenty of them at home. At least ten million acres of former valuable land in the United States already have been gullied beyond repair. Several more million acres of rich soil have been buried under sand and gravel or made swampy by overflows from mud-choked streams. In a single county of the Piedmont region, ninety thousand acres of what used to be productive soil have been converted into an almost worthless waste of gullies and rocks; and most of that waste could have been prevented. Why, in parts of the Atlantic and Gulf coast plains, gullies have been washed 150 feet deep in little more than a generation. At one place in western Georgia, where 40 years ago there was a school-house surrounded by an undulating plain of rich fields of corn and cotton, today you can see a thousand acres of ugly gullies with one sweep of the eye. And that's not all. In that county, sixty thousand acres of former farming land has been torn up by gully washes until it is now in worse shape than any shell-fire, mines and trenches ever left a battlefield. Centuries of soil building will be needed to restore that land. Or, take the uplands along the Mississippi, Missouri, and

Ohio Rivers and the rivers and creeks that run into them, and you'll find some whole counties have been so washed that only patches of really good land are left.-----

BROWN: Well, thank goodness, we don't have much slope to our land. I guess they just have that trouble where there's a good bit of slope, don't they?

EXPERT: Get this, Brown. Wherever water runs down hill there will be erosion. Of course, it will be worse in some places than in others, according to the kind of soil, the degree of slope, the vegetative cover, etc. Now as bad as gulling is, it is not the worst form of erosion; that is, it's not the form that's doing the biggest damage to our farm lands.

BROWN: What kind is?

EXPERT: Why, the slow type of washing that gradually planes down the surface soil is the most damaging, taking the country as a whole. That slow type of washing exposes the less productive, less absorptive, and more erosion subsoil. Even gentle spring showers carry off valuable soil materials. The richest part of the soil is at the surface --- that's what is being washed off. Recently it was found that from 12 to 24 inches of topsoil had washed from considerable areas in northeastern Kansas where farming has been going on little more than two generations. At the Missouri experiment station forty-two tons of soil were removed from a single acre of cultivated land in a single year on a 4 per cent slope. In west Texas, on the watershed of the Brazos River, 40 tons of soil were removed in one year from a measured acre of ground where the slope was only 2 feet in a hundred. ------- Another thing, there is evidence that soil erosion has more to do with our ever increasing floods than any other agency -----

BROWN: How do you make that out?

EXPERT: Well, in any flood, it is the last few feet or even the last few inches of rising water that cause levees to give way and dams to break. Keep the soil in the fields where it belongs and out of the rivers where it adds volume and cutting power to the water, and you will do considerable toward keeping down floods. And the very means that we will use to hold back the soil, will be the means of storing a considerable part of the rainfall in the ground for summer use of crops, and so keep that water out of the rivers.

BROWN: Just how are you going about keeping the soil and water in the fields?

EXPERT: By planting soil-conserving grass and trees and shrubs on land that is too unstable or too steep or too stony for crops.

BROWN: What are you going to do about crop land?

EXPERT: Why, slow-up the run-off by building hillside terraces. It is either terrace or waste your land ----

BROWN: Is that terrace building practical?

EXPERT: It certainly is. Terraces are eminently practical and cheap of construction. When properly made and rightly placed, they are highly efficient soil savers. The hill side terrace will pay its own way many times over. In the State of Oklahoma, through which the Arkansas and Red Rivers pour huge quantities of water into the Mississippi, two hundred thousand acres of land have been terraced. If that kind of work can be extended through the areas of more vulnerable soil in the central and upper Mississippi Valley you will see that it will have an important effect in cutting down the danger from floods.

BROWN: Can you stop floods altogether that way?

EXPERT: Of course not. No one contends that terracing alone will control floods. There must be levees, of course, and reforestation of the non-arable lands, and probably reservoirs and spillways; but certainly, there must be more protection of the land against erosion.

BROWN: Are there any other countries that do more than we are doing along that line?

EXPERT: Oh, yes. In the East, tea and rice and rubber and even the cinchona trees from which comes most of our quinine are chiefly grown upon carefully constructed terraces or in areas protected by embankments. In the far-away Straits Settlements there are erosion stations along some of the rivers. These stations continually determine the amount of suspended material coming down in the water. When this amount gets above a certain point, word is sent upstream to the big rubber plantations that too much land washing is going on somewhere and that managers of the plantations should immediately go out and find the trouble and put a stop to the wastage.

It is high time we farmers in America were getting down to the job of slowing down the effects of soil washing. On millions and millions of acres of land in the United States, soil erosion is the biggest problem facing the farmers. It is the national duty of you men to become seriously concerned about the way our wealth is being washed away. Be sure to terrace in time.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL Wed. Dec. 7.

(NOT FOR PUBLICATION)

Farm Economics Meeting No. 10.

SUBJECT: How Far Returns Vary

ANNOUNCEMENT: Yes, at these Wednesday meetings we've been talking over the business of farming ---- The meeting has already started --- Come on in, and sit down ---- anywhere you can find seats --- The expert from the Department of Agriculture is going to give us some figures on how farm returns vary in the United States ---- How's that? -- Oh, yes --- yes, he's the one they are talking to now ----

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HOLTON: How much do farmers make?

EXPERT: Well, of course, the financial returns from farming vary widely.

HOLTON: I wish mine varied widely, if they would just vary up instead of down ---

EXPERT: Naturally, Holton. We all want to have more money to show for the year's work.

HOLTON: Sure, but besides the changes we want, we generally get some we are not looking for.

EXPERT: That's true. We can't always control such things. There must be somewhere near six million different results, from the six million different farms in this country, each and every year.

HOLTON: Yes, and you get a different income almost every year from the same farm. If you do happen to close out the year with the same income it's usually due to a different combination of circumstances.

EXPERT: Yes, variation is certainly the rule rather than the exception. Why, last year there was a report in the papers that a potato grower in Maine had sold potatoes grown on his farm for about $340,000 and that they cost him about $260,000. That is not an official report. It is way beyond most farmers, but I am not at all sure it is the top figure -----

HOLTON: Well?

EXPERT: Well, you know, farmers are not so free to talk about their losses, but one report we did get in the Department of Agriculture from a ranchman in the Southwest showed that he was nearly $30,000 worse off at the end of last year than at the beginning, through failure of receipts and growth and prices of stock

to meet ranch expenses and keep up the ranch and stock. No doubt there were other large operators who fared worse. The "average" is somewhere between that rancher's losses and the potato man's profits.

HOLTON: I didn't mean to ask you just what the exact "average" was. I just want to know what the general run of farmers make?

EXPERT: Well, the general run of farmers seem to get just a little over an even break. I have the figures here. These were taken from voluntary reports made by farm owners operating their own farms in 1924, 1925, and 1926. We had nearly 14,000 report to us last year. Every State in the Union was represented. The farms were of all sizes from 7 acres on up. Those farms were of all kinds common in different parts of the country, good, poor, and indifferent. From these reports we computed the net results for each farm, as the nearest to an income figure that we could get.

HOLTON: What do you mean, the "net results" for each farm?

EXPERT: That is the difference between the cash receipts and cash expenses for the farm business plus increase in inventory of personal property, or less the decrease if a decrease was shown, as it was in many cases.

HOLTON: And how much did those reports show the general run of farmers cleared?

EXPERT: Well, in 1926, 46 per cent of the reports from owner farmers in the North Atlantic States fell between zero and $1000. Ten and one-half per cent of the farmers in that region made less than nothing. A bit more than two per cent of them netted more than $5,000.

HOLTON: How about some of the other sections of the country?

EXPERT: In the East North Central States also 46 per cent of the net results were between zero and $1,000.

HOLTON: Were there as many that didn't clear anything? -- that showed a loss?

EXPERT: No. There were not quite as many either below zero or above $5,000. In the East North Central States 7 per cent were below zero and only one per cent were above $5,000.

HOLTON: How did the West North Central States compare.

EXPERT: In the West North Central States, 36 per cent fell in the group zero to $1,000. But 14 per cent were below zero and 3 per cent were above $5,000.

HOLTON: Do the percentages run about the same as that in the South?

EXPERT: No. In the South Atlantic States 60 per cent of the net results were between zero and $1000, while nearly 20 per cent were below zero and only half of one per cent netted more than $5,000. In the South Central States there was wider variation. Even there, however, 56 per cent of the farms reporting showed returns between zero and $1000. 9 per cent were below zero and one and two-thirds per cent netted above $5,000.

HOLTON: How about the 11 Western States?

EXPERT: The reports from those 11 Western States showed 36 per cent between zero and $1,000. 6 per cent returned more than $5,000, but 11 per cent did not make as much as zero. Taking the country as a whole, figuring all the different regions put together 48.5 per cent of the reports showed the farmers making between zero and $1,000. 11.5 per cent fell below zero, and 2.3 per cent showed more than $5,000 profit for the year.

HOLTON: What's the difference between what the highest farmer reporting made and the lowest report?

EXPERT: The difference between the highest and lowest was $63,300.

HOLTON: Do the figures run about the same for the other years?

EXPERT: Well, in 1925, the extreme difference reported was $115,000; but 44.1 per cent were between zero and $1,000, 3 per cent were above $5,000 and 9.4 per cent below zero.

HOLTON: How about 1924?

EXPERT: Not much different. In 1924, the extreme difference between the returns from the highest and the lowest returns reported was $57,200 with 46.5 per cent between zero and $1,000, 2.7 per cent above $5,000 and 10.6 per cent below zero.

HOLTON: What are the causes of those differences?

EXPERT: That's quite a complicated story. There are many reasons and they are very real reasons. In these talks we've been having here we've mentioned some of the things. For instance, we talked about the size of the farm in relation to returns, and crop yields, and other livestock returns, labor efficiency.--- and there are a number of other things which have their effect on the farm business. The figures I've just given you show you how things turn out. Those figures give you the results of the very complicated interplay of conflicting forces which make for and against success of a farm business, as shown in reports from fifteen thousand odd farmers.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Fri. Dec. 9, 1927.

(NOT FOR PUBLICATION)

Livestock and Dairy Meeting No. 10.

SUBJECT: Principles of Breeding.

ANNOUNCEMENT: Every Monday, Wednesday, and Friday our farm club meets here in the school house, with an expert from the Department of Agriculture.-- That's the man over there -- the one that Dryden is talking to --- Let's get up closer-- sometimes we get some good hints at these meetings ------

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DRYDEN: I don't understand it --- My herd are all choice black and white Holsteins; at least, they were until that red and white calf was born --- Why is that? ---- How does it happen that black and whites can have a red and white calf? ---

EXPERT: Well, somewhere in the ancestry of that red and white calf there must have been Holsteins with red color instead of black.

DRYDEN: But, I tell you, both parents of that calf were pure black and white.

EXPERT: You mean, you thought they were pure black and white.

DRYDEN: I guess I know black from red. They were pure black and white Holsteins, I tell you.

EXPERT: That's the way they looked to you, Dryden, or to any one else, but cows are not always what they seem.

DRYDEN: How's that? How do you explain that red and white calf?

EXPERT: Well, we know a lot more about heredity than we used to. Thanks to the Austrian monk, Gregor Mendel, we know about what happened in your herd. He experimented by crossing different varieties of garden peas, but we've found that what Mendel discovered in peas applies to dairy cows as well. The laws of heredity he worked out have been applied to any number of practical problems in the breeding of both plants and animals ---

DRYDEN: How do they apply to that red and white calf of mine?

EXPERT: That is a long story. That red and white calf indicates that somewhere back in its ancestry there were some red and white individuals. Pure black and white animals were crossed with red and white animals. Such matings were

responsible for black and white animals having factors for red in their hereditary transmission.

DRYDEN: Then you think the parents of my red and white calf were really not black and white?

EXPERT: They must have appeared black and white but they carried the factor for red in their hereditary constitution. They produced an occasional red and white calf. Such animals are called hybrids. In matings of two hybrid parents each of which is black and white in color but each bearing the hidden factor for red and white, one calf in four, on the average, will receive the inheritance for red and white from both parents and therefore will be red and white in color, and that's what has happened in your herd.

DRYDEN: What would you do about it?

EXPERT: I'd advise you to get rid of every red and white calf which appears. But the surest way to eliminate the fault is to get rid of the parents of that red and white calf. Constant selection, you know, is essential for success in cattle breeding. Choosing animals showing desirable characteristics and rejecting those lacking them eventually fix good qualities in the herd. Nowhere is that more true than in breeding for improved milk and butterfat production. However, the process of developing a high-producing strain of cows is more complicated than selecting and breeding for a special conformation or color pattern ----

DRYDEN: Why is that?

EXPERT: Well, the quantity of milk produced by a cow is probably determined by several heredity factors, instead of by one as in the case of color, and each factor lends itself to the sorting out process. The segregation of production factors is a subject of study from various angles now, but it is generally agreed that the ability of an animal to transmit high production to succeeding generations is governed by factors which it receives by chance from its parents.

An interesting result of this chance combination of favorable factors in one individual is seen when the offspring of a particular animal shows many of the characteristics of that animal to the exclusion of those contributed by the other parent. That's the condition known as prepotency. You should make every effort to discover animals prepotent in their transmission of high production.

DRYDEN: It's the bulls that are prepotent, isn't it?

EXPERT: Prepotent individuals may be of either sex, but in dairy-cattle breeding it is through the bull we get the quickest improvement. A cow has only a few offspring and is often mated to a single sire, whereas the bull is commonly mated to a number of cows. For that reason, when you choose a bull for your herd, look up the production records of all his daughters. If all his daughters from different dams are uniformly high producers, it is reasonable to assume that later daughters of that bull will also be high producers. That is what you call a good proved sire.

DRYDEN: Will the sons of prepotent sires always produce prepotent animals?

EXPERT: Not always. The sons may get factors for low production from their mothers. However, if you continue to use proved sires in your herd, you will increase your chances of getting a strain of uniformly high producers.

DRYDEN: How about the age of the bull? Does that have any effect on prepotency?

EXPERT: Well, you must remember that the characters or factors which determine the inheritance of the calves are transmitted through the germ plasm of their parents. Apparently the character of the germ cell is the same through life. There is no evidence that any bull or cow, or any other animal for that matter produces one type of cell early in life and another type later. No. Age hasn't any effect on prepotency. Of course, you shouldn't use a bull for service too early, but a bull will transmit the same characteristics to his offspring when he is young as when he is 10 years older.

DRYDEN: Some cows are more prolific than others?

EXPERT: Probably so.

DRYDEN: What's the best way to judge that?

EXPERT: Well, in the case of horses and hogs, it has been demonstrated that a favorable relationship exists between the number of offspring of mothers and daughters.

DRYDEN: Does that hold good with cows too?

EXPERT: Adequate information on that point for the cow is still lacking. One study of a large number of dairy-cow records showed a racial tendency for daughters of highly prolific dams to be less prolific ----

DRYDEN: Then in breeding for prolificacy it would be dangerous to select a cow for mating purposes according to the number of offspring of its dam alone?-

EXPERT: Yes. It certainly would. When selecting breeding stock, you should obtain animals whose ancestors have been prolific. --- If you are breeding dairy-cattle, you should be familiar with the principles discovered by Mendel. You must know the basic principles of heredity to improve your herd properly in all the details which are not controlled primarily by feeding and care.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Mon., Dec. 12, 1932

Crops and Soils Meeting No. 11.

SUBJECT: How to Cut Trees in the Farm Woods.

ANNOUNCEMENT: Each Monday our farm club meets here in the schoolhouse to discuss crop and soil problems. We just sit around the stove and swap information. Of course, we have experts from the Department of Agriculture. That man talking over there now, for instance, is a forester from the Department. Some of the men got him to come out to tell us how to cut trees so as to keep the farm woods producing. Let's mosey over and listen to what he is saying ----------

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DUNCAN: What do you mean 'timber crop'?

EXPERT: Why, the mature or final crop of timber. The earlier cuttings are known as thinnings.

DUNCAN: Well, when is the best time to cut that main timber crop?

EXPERT: Of course, Duncan, you understand the age at which it pays the highest net return to cut the final or mature crop is not the same for all species or even for the same kind of timber. Market conditions have considerable to do with it. The size of the trees also has a good bit to do with it.

DUNCAN: Take pine for instance. When should pine be cut?

EXPERT: Generally speaking, it is a mistake to harvest a piece of white pine or southern yellow pine under 30 to 40 years.

DUNCAN: Can't you cut it younger and realize on it sooner? You can at least get small sawlogs, pulpwood, crossties, or firewood sooner than that.

EXPERT: If you do that, in most cases you'll sacrifice your profit; because your pine is then growing at about its fastest rate. You wouldn't think of drawing money out of the bank while it was drawing from double to triple the average rate, would you? No, no, Duncan. Good size and clear quality in lumber means greatly enhanced value. For that reason, it often pays the biggest to put off cutting the timber crop until it is 40 to 50 years old.

DUNCAN: The thinnings would bring in something, I guess?

EXPERT: Certainly. The returns from the thinnings should add up to one quarter or one-third as much as the value of the final crop.

DUNCAN: Just how should you cut the timber?

EXPERT: Well, Duncan, the controlling aim in good cutting is to secure a full stand of young trees on the cleared land as quickly as possible after logging. The land should be kept continuously productive. Other considerations are very important, however. Such things as cutting low stumps and cutting small or high tops in order to effect complete utilization of timber. There is a vast difference between good and bad logging. The difference is not only in the money you get right now. Much more important than that is the effect of good and bad logging on the potential growing power or the future earning capacity of the land.

DUNCAN: What would you call good logging?

EXPERT: Well, let me give you some rules of good logging. You can write these down, if that will help you to remember them. Anyway, I hope you get them thoroughly impressed on the tablets of your memory; and being there, I hope you follow them. They will mean money in your pocket when it comes to managing that farm woods of yours.

DUNCAN: All right, let's have them?

EXPERT: (Slowly) Rule No. 1. Cut no sound thrifty trees below 12 inches in diameter.

DUNCAN: How high above ground?

EXPERT: Oh, at one foot from the ground. Cut no sound thrifty trees less than 12 inches in diameter at one foot from the ground.

DUNCAN: All right?

EXPERT: (Slowly) Rule 2. Cut low stumps - 12 inches or under -- and so save the best timber. Also cut logs well into the top, although of lower grade.

DUNCAN: Yes?

EXPERT: (Slowly) Leave 4 to 12 bushy-topped thrifty trees per acre as seed trees.

DUNCAN: That first rule about cutting no sound thrifty trees less than 12 inches in diameter will take care of that, won't it?

EXPERT: Yes, it often will. Now (Slowly) Rule 4. Take care in all stages of logging not to injure the young timber.

DUNCAN: That's not as easy as it sounds.

EXPERT: (Slowly) Rule 5. Pull all brush away from living trees; to lessen the fire risk and the menace of infestation by insects or "worms" and Rule 6. Keep out fires at all times.

DUNCAN: I'm going to follow those rules -----

EXPERT: Good! You'll find that good logging pays. Good logging helps both the buyer and the seller. It is often a mistake to cut small trees. Much of the wood goes into the slab and sawdust piles. What is taken makes only a small scale of lumber which is low grade --- and low value. Young trees are growing fast and usually making the highest net money return to the landowner.

DUNCAN: You can't always follow that rule to cut no sound, thrifty trees less than 12 inches on the stump. In thinning, you might have to cut smaller trees than that, mightn't you?

EXPERT: Yes, that rule must necessarily be modified at times to get the best results. Of course, in dense groups, smaller trees should be cut to open up the stand. Then too, some smaller trees are cut to get rid of slow-growing, defective trees, and lower-grade trees. In places trees of larger size should be left to provide enough seed to restock the ground. On lands subject to washing, trees should be left for better protection of the soil.

However, the small sawmill operator wastes timber in high stumps above a height of 12 inches. Sometimes what he wastes that way would be enough to pay for the logging. In such high stumps, he is leaving on the ground the highest grade and most valuable timber of the tree.

An ample stock of seed bearing trees is a prime requirement for getting another crop of good kinds of trees to restock the lands following logging.

Trees should be thrown, so far as possible, into openings rather than into groups of young growth. Tops or "Lops" should be cut for firewood or at least pulled into openings away from living trees. Often they should be cut up and piled in small piles. And you should all realize, that fire is the arch enemy of the forest. In some places it is doing more damage to our timberlands than the woodsman's axe and saw.

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U. S. RADIO FARM SCHOOL Wed. Dec. 14, /27

(NOT FOR PUBLICATION)

Farm Economics Meeting No. 11.

SUBJECT: The New Idea in Marketing.

ANNOUNCEMENT: Each Wednesday our farm club meets here in the school-house to talk over the business of farming. At the meeting, today, we are starting a series of talks on marketing problems. We expect to have an expert from the Department of Agriculture here with us to discuss marketing.-------Yes, there he is now --- Let's find out what he's got to say ----------

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EXPERT: Yes, we are making great progress these days. We have a new idea in marketing farm products now.

HOLMAN: What is the new idea in marketing?

EXPERT: Why, to adjust production to what consumers will buy, or what the market demands. That's the idea in a nut-shell. The demand is the thing. If demand slows down, we must adjust production or we'll have a surplus. Prices will be forced down.

HOLMAN: Sure. There's no question about that. But how are you going about it?

EXPERT: Well, you know, many changes are taking place in the consumption and use of various products. If you are to adjust your production to changing demand, you must know about these changes. The new approach to the marketing question is to try to learn what consumers want and then pass the information back to you producers; so that you willturn out a product which will move fast at good prices in the market.

HOLMAN: What's being done along that line?

EXPERT: The United States Department of Agriculture is trying to measure the demand through its consumer surveys.

HOLMAN: What are consumer surveys?

EXPERT: Those surveys consist in making a house to house canvass of families to families to learn the food they prefer, the kind and quality they want and how they use it. Surveys of this sort have been made on meats, milk, certain fruits and vegetables such as apples, prunes, citrus fruits, raisins and cranberries, and other more specialized products such as honey. The meat survey was the most comprehensive. The Department canvassed over 4,000 families in 16 cities and learned the preference of consumers regarding different kinds of meat such as beef, pork

and mutton, and how those meats were used.

HOLMAN: Well, what did they find out, anyway?

EXPERT: They found out that most consumers don't know the qualities of various cuts of meat. In fact, many housewives know only a few of the many cuts of meat that can be bought in nearly every shop. The survey showed that there is a great field for popular education among consumers on what makes for quality in meat, and how they may buy various cuts and use them most economically. The survey also indicated that beef is preferred in two-thirds of the households of American white people. As the standard of income increased, preference for pork decreased and preference for lamb increased. A similar survey on apples disclosed the fact that many consumers have little or no knowledge of varieties. Most of them buy apples for eating because they are red, and buy apples for cooking because they are green colored.

HOLMAN: How does that help us farmers?

EXPERT: Well, that type of survey is just in its beginning. It will have to be used much more extensively to make it of much value in improving marketing. It illustrates the problem of discovering what the consumer wants. These consumer surveys have shown that the consumer must be educated to recognize quality through advertising and other means, if high quality products are to bring prices in keeping with the higher cost of producing and handling them. Surveys through the wholesale and retail trade have given useful information on how best to select and prepare products for market, on the seasons when certain products are preferred, and what consumers are willing to pay for a higher grade product.

Another outstanding change in marketing is the growing use of quality guarantees that go with the product from the time it is produced until it reaches the consumer. For example, when butter of high quality is made and inspected at the creamery, the certificate of inspection is carried through with the package to the consumer. The organization making the butter tries to see that its quality standard is kept up at all times. That tends to expedite trade, stabilize prices to some extent, and fosters consumption by assuring the consumer as to the quality of the product he is getting. Eggs are another product which is being handled in the same way. Fruit growers have a similar system, with fruit wrapped in paper carrying the brand name.

HOLMAN: You can't do that sort of thing on a small scale. That takes a big permanent organization.

EXPERT: You are right. Community organization is necessary. Standards must be worked out carefully. They must then be followed by all the producers in the locality which must be assembled in quantities that can be sold effectively through regular market channels. It means carloads rather than wagonloads of produce. Federal and State agencies are helping in this work through the development of official standards which will be recognized in all markets and in all producing sections.

Another new phase of marketing of farm products is the organization of growers, mostly on a cooperative plan, to handle enough produce to justify them having representatives in the principal markets to keep their members informed

about the requirements of those markets. Of course, much of this service is provided for producers in general through the Federal Market News Service, but producers can help themselves a good deal by having their own representatives also study the movement of their products.

Perhaps no single phase of marketing has developed as fast as inspection. Federal receiving-point inspectors are now maintained in 40 cities. Nearly 33,000 carloads of fruits and vegetables alone were inspected last year. Representatives of the Department inspected nearly 200,000 cars of fruits and vegetables at shipping points. Other inspection work covers poultry, eggs, butter, hay, beans, livestock, and meats.

HOLMAN: I gather from what you say, it's not any one improvement in marketing, but a combination of improvements.

EXPERT: Exactly. We have learned that marketing is not a subject that can be handled separate from production. To be able to offer the consumer the kind of product he wants, you must begin by adjusting farm production to turn out that kind of product. The introduction of standards and inspection with the wide distribution of price information through the Market News Service which keeps everyone informed on changes in the markets, is going a great way to remove evils in the trade, to promote honesty among buyers and sellers, and to reduce waste. The producer knows better what price his product will bring, and the trader knows the quality of the product he is to receive.

We are approaching a period when a program of production and distribution is being developed for each commodity in each producing section. By the wide distribution of the facts of quantity of production, its quality, shipments to market, stocks in storage, and the rate of consumption, we are able to avoid to some extent serious over-production, gluts in the market, and the consequent losses. All of this will take time to work out, but we are making rapid progress.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Friday, Dec. 16.

(NOT FOR PUBLICATION)

Livestock and Dairy Meeting No. 11.

SUBJECT: Meat Cutting.

ANNOUNCEMENT: Here we are in the old school-house again. This is our day to talk about things concerning livestock.----- But what's the idea of the hog carcass?-- It looks as if we had a butcher's shop down front there -- What's that? -- Oh, I see, the Department of Agriculture expert is going to show us how to cut hog meat ---- Let's get down front --- I want to see this ------

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EXPERT: Are you all ready? We are going to cut up this hog carcass. I want you all to watch where the cuts are made. But more than that, I want you all to get the reason for the cuts as they are made. ----- Yes?

FINNEY: How are you going to use that hog meat? -----

EXPERT: That's a question to the point, Finney ------ Just what particular cutting method should be selected depends upon the use to which the meat is to be put. If you are going to sell the meat, of course, you want to make the style of cut that your trade prefers and make the higher priced cuts as heavy as possible --------

FINNEY: Show us the best way to cut the carcass for putting down meat for our own use on the farm.

EXPERT: All right. To put down meat for your own use, you should aim to get the largest possible amount of meat to cure and can; and the smallest possible amount that must be frozen or used fresh ----- Now we will just split this hog right through the center of the back bone --

FINNEY: Wait a minute there! You'll ruin the back bone cut that way, won't you? -- There is nothing better than back-bone ---

EXPERT: Oh, yes, splitting down the center this way eliminates the back bone cut. But you will notice it does not mutilate the big back muscle, however. Regular loins can be made for chops and roasts. Or, what is more important from a preservation standpoint, those loins can be easily boned for canning. How meat should be cooked depends upon how it will cook to best advantage. Soup stock is cut from stew meat, stews from boiling pieces, boiling meat from roasts, and roasts from steaks. In cutting up this hog, the thick, lean, tender ham, shoulder, and loin are removed from the thinner fatter side or bacon strip. The fat irregular head needs special trimming and then boiling. Ordinarily you can cut off the head just behind the ears here on a

line at right angles to the back bone. Then you saw through the back bone and ribs to remove the shoulder on a line parallel with the head cut. Some cut shoulders one rib wide which leaves some thick muscle on the bacon.-----

FINNEY: I cut a four-rib shoulder which puts some thin bacon on the shoulder.

EXPERT: Well, three ribs makes a good width. You can take off the ham just behind the rise in the pelvic arch. The ham will slice better if you make the cut at right angles to the hind leg. You remove the full-sized bacon strip on the line where the thick muscle of the loin joins the thinner meat of the side. You can saw across the ribs and divide these parts before taking out the spare ribs.

FINNEY: There is a lot of art in trimming those rough cuts, isn't there?

EXPERT: Yes, but it just has one main rule. That is, do a smooth, even, attractive job; putting all the short ends and uneven pieces into lard and sausage.

FINNEY: Just how much meat will you get out of, say, a 200-pound live hog, that way?

EXPERT: Well, a 200-pound live hog cut up this way, will give you about 80 pounds of curing meat in ham, shoulder, bacon, jowl, and feet. You will have about 15 pounds of boned loin for canning; about 8 pounds of sausage, and 25 pounds of rendered lard. Three pounds of head meat and 9 pounds of spare ribs will be all that is left to be eaten fresh. ----- This, of course, is just one way to cut pork. But this and all the other ways are governed by the principle of making each piece easy to cook. That is the point to remember.

FINNEY: How soon after killing would you start curing?

EXPERT: Oh, about 24 to 36 hours after killing. The first essential in curing pork, you know, is to make sure that the carcass is thoroughly cooled. But never allow meat to freeze either before or during the curing. The proper time to begin curing is when the meat is cool and still fresh.

FINNEY: What would you use for curing? Salt?

EXPERT: Well, salt, saltpeter, sugar, and molasses are the principal preservatives used in curing pork. When you put salt alone on meat, it makes the meat hard and dry, because its action draws out the meat juices and hardens the muscle fibers. Sugar and molasses soften the muscle fibers and improve the flavor of the meat. A combination of salt and sugar makes a good cure.

I want you all to realize that every farm should produce the pork and pork products eaten on that farm. There are profits in selling hogs and buying pork --- but not for the farmer who does it. Hogs may be raised and the meat cured at home for much less than the cost of bought meat. A market for good country-cured hams, shoulders, and sides is easily found. In spite of that, farmers continue to buy cured meat. Of course, it may not be practicable for every farmer to butcher and cure the meat from all the hogs he grows, but in

nearly every community a few farmers could do it and make good profits. Farmers who sell country-cured meats have very little trouble in building up a permanent trade. In order to do that, however, you must understand the kind of cured meat the trade demands. Consumers want well-marbled, juicy, savory pieces of meat showing the proper mixture of fat and lean. They want them properly cured and possessing a good flavor.

FINNEY: That kind of meat depends a lot on the condition of the hogs -----

EXPERT: Yes, a hog in medium condition, gaining fast in weight, yields the best quality of meat. You should never kill a hog that is losing flesh. A reasonable amount of fat gives juiciness and flavor to the meat, but large amounts of fat are objectionable. The breeding of the hog also plays an important part in producing carcasses of high quality. It takes selection, long-continued care, and intelligent feeding to produce meat of desirable quality. Smooth, even, and deeply fleshed hogs yield nicely marbled meats.

FINNEY: How about feeding the hogs you intend to kill?

EXPERT: It is better to hold them entirely without feed for 18 to 24 hours before killing, but give them all the water they will drink. And please remember that no animal should be whipped or excited just before killing. However, if any of you here would like more details on the killing, curing, and canning of pork on the farm, you should write to the United States Department of Agriculture for Farmers' Bulletin No. 1186.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Mon. Dec. 19, 1927.

(NOT FOR PUBLICATION)

Crops and Soils Meeting No. 12.

SUBJECT: Seed Potatoes.

ANNOUNCEMENT: This is our farm club. We meet here in the school house every Monday, Wednesday, Friday, and talk over farming problems with experts from the Department of Agriculture. On Mondays, we always talk either crop or soil problems. Today we're talking about the proper care of seed potatoes and how to get better yields. Listen!-------

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EXPERT: No potato grower should be satisfied with low yields.

MURRAY: What's the average yield of potatoes in the United States, anyway?

EXPERT: Well, the average for the years 1918 to 1927 was 104.9 bushels. During that same period, however, the average yield of potatoes in Maine was 233 bushels per acre.

MURRAY: Yes, and I understand, that in Pennsylvania and Michigan and other states there are 300-bushel and 400-bushel potato clubs.

EXPERT: That's nothing, in the San Luis Valley, Colorado, they formed a 600-bushel club this year.

MURRAY: How many members did they get at that rate?

EXPERT: Of the fifteen who tried for membership in the club, eleven of them produced more than the 600 bushels of potatoes to the acre. One of them produced 833 bushels. Another got a yield of 677 1/3 bushels. Last year the Zuckerman Brothers of Stockton, California, produced an average of 1001 bushels per acre on nine measured acres. The heaviest yielding acre produced 1038 bushels. This year they produced 889.9 bushels per acre on 8 measured acres.

MURRAY: Whew! Most of us can't compete with that.

EXPERT: Well, maybe not, but that just shows you the possibilities in increased production per acre of potatoes.

MURRAY: I guess to get those high yields, you have to use good seed potatoes.

EXPERT: Certainly. But don't forget that good seed is only the first step toward bigger yield. You can injure good seed in a number of ways.

MURRAY: How you mean?

EXPERT: Well, you can injure good seed by careless methods of digging. You can hurt them by rough handling in gathering and storing the crop. Poor storage conditions; failure to disinfect the seed; and improper handling of the seed in cutting and planting also cause injuries which injure the vitality of good seed.

In harvesting your crop, you should take advantage of favorable weather and soil conditions, whenever possible. If conditions are not favorable and danger of frost makes it necessary for you to dig the potatoes, you should aim to allow the tubers to dry off as much as possible before gathering them. That's so you can avoid storing a lot of soil with the potatoes.

MURRAY: You say potatoes are hurt in digging-- How would you avoid that?

EXPERT: Much of the injury in digging may be avoided by running the digger deep enough to get under the potatoes; and by running it slow enough to prevent undue bruising and skinning. Rough handling in gathering and storing the crop is responsible for a good deal of added tuber damage. Under improper storage conditions that may seriously reduce the vigor of the seed stock.

MURRAY: How would you gather them?

EXPERT: The Ideal way of gathering and storing the crop is to use slat bushel crates; either of the collapsible or non-collapsible type.

MURRAY: What the advantage in that?

EXPERT: Why, you gather the potatoes directly into the crates in which they are hauled and stored. You insure a minimum amount of injury. That means you cut down the storage losses. When potatoes are hauled from the field in sacks and stored in bulk, you gather them in wire or splint baskets. You empty them into sacks or barrels. You then haul them to the storage house and dump them out. All that handling means more injury.

MURRAY: But suppose you store them in bulk, how deep should the bins be?

EXPERT: I'd never store seed potatoes in bulk to a greater depth than six feet. But, of course, if the tubers are well ripened you might store them to a depth of, say, eight feet. The dimensions of the bin may also vary with the character of the tubers stored. The ideal storage house is well ventilated and kept at an even temperature. Nowadays, the proper distribution of cold air intakes and warm air outlets in storage houses is receiving more attention than it ever did before. The same is true of bins.

MURRAY: What isthe best temperature for seed potatoes?

EXPERT: The best temperature to keep potatoes in a dormant condition is [illegible] degrees Fahrenheit. But in the early part of the storage period it may be between 40 to 45 degrees. You need fairly high humidity in the storage house to prevent undue loss of moisture. Fairly high humidity is favorable to master healing over of wounds, thereby lessening dry rots, etc. It also helps keep up the vitality of the seed stock.

Many potato crop failures are due to failure to disinfect seed stock before cutting and planting. You should treat all seed stock before cutting in order to kill scab and other disease organisms. With proper storage facilities, you should be able to keep potatoes in a dormant condition until planting time. You should always take the seed potatoes out of storage a week or ten days before you expect to plant them. During that week or ten days, they should have a room temperature of from 60 to 70 degrees. At that temperature, the sprouts soon come out. If stored in fairly strong light the sprouts will soon get strong and stubby and take on a greenish red tinge.

MURRAY: How long before planting would you cut the seed?

EXPERT: As a rule, it is best not to cut seed potatoes much before time for planting.. Exposing freshly cut seed potatoes to the wind or sun for even a short time lowers their vigor. It is also bad practice to take any considerable quantity of cut seed into the field, either in sacks or barrels, and let it lay around in the sun and wind. Under such conditions, the seed begins to heat. However, if you can hold them at a temperature of 45 to 50 degrees with high humidity, it may be safe to cut them a considerable time before planting.

But, I want you all to remember, that seed potatoes which are regarded as excellent stock when harvested, may lose a considerable part of their vitality if improperly handled and held during the winter under poor storage conditions. It is also evident that good seed stock may be damaged if they are exposed to strong sunlight or currents of air for any considerable time after cutting or if allowed to heat.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Wed. Dec. 21, 1927.

(NOT FOR PUBLICATION)

Farm Economics Meeting No. 12.

SUBJECT: Standardization in Marketing.

ANNOUNCEMENT: Last Wednesday our farm club started a series of meetings to discuss marketing. The Department of Agriculture expert promised us last time that today he would take up the question of standards for farm products. ----- It looks like the meeting is about to start -- It has started -- There's Gus Thomas asking the expert something now -------

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THOMAS: You say, we have United States standards now for nearly every important farm product?

EXPERT: Yes, the great staples, cotton, wool, grains of all kinds, hay, livestock, etc., are provided for. So are the perishables. Standards for nearly 40 fruits and vegetables are in use. Also standards for honey, eggs, and almost any other farm product you can mention.

THOMAS: Do we have to use those standards?

EXPERT: Some of them are compulsory. Under specific laws passed by Congress the cotton standards are compulsory for cotton offered in future trading. The grain standards must be used when grain is shipped in interstate trade if any grades names are mentioned. Some of the fruit and vegetable containers are also standardized by law. If products are stored in warehouses licenced under the U.S. warehouse act and are stored under grade names, the grades must be those promulgated by the United States Department of Agriculture. All other standards are for voluntary use, except in certain states where the use of U.S. standards for certain products has been made obligatory.

THOMAS: How about those standards? Are they practical?

EXPERT: Sure. They have to be. After all, the proof of the grade is in its adaptability to commercial use. The specifications not only have to be theoretically sound, but they have to be such that business men and their employees can understand them and actually put them into operation. In many cases, before the standards have been issued by the department, public hearings have been held in various parts of the country. At these hearings, representatives of the trade and others interested have been invited to make suggestions and criticisms.

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Often, it is necessary to provide more than one set of grades for the same product. For instance, a medium sized apple of very attractive color is more acceptable to the buyer of dessert fruit than a bigger, poorly colored apple of the same variety, and so it grades higher for that purpose. The reverse would be true if the apple was sold for canning, where the cost of peeling is a consideration and color is not. If the apples were to be manufactured into vinegar neither color nor size of themselves would effect value.

THOMAS: Well, what's the good of these standards anyway?

EXPERT: There are many reasons for standardization. We must have a common language as a basis for future contracts. Particularly, in dealing in such things as cotton and grain where future trading is now well organized on the basis of definite specifications. With such commodities as cotton linters, standard grades help to establish basic prices and differential quotations. With some other commodities, such as fruits and vegetables, a surprising amount of trading is still done on the basis of vague descriptions. That loose method of doing business has often resulted in endless disputes in the event of a material drop or rise in the market.

We must have clear and definite grades in transactions through exchanges and in making sales by telegraph, sales in transit, or any kind of sale where the buyer has no chance to see the product. Then, too, standard grades make it easy to settle claims. You know, claims against railroad companies for losses of agricultural products in transit run into millions every year. In order to settle such claims, you must know the value of the product. For instance, when evidence is produced to show that a certain shipment was of grade U.S. No.1 it is comparatively easy to establish the prevailing price. American cotton standards are now used practically throughout the world as the basis for arbitrating disputes arising out of transactions in American cotton.

Another reason for standard grades is that they permit an intelligent comparison of market prices. Before we had standard grades, growers and shippers had no way of knowing whether variations in prices in the market reports represented differences in the market demand or simply differences in the actual quality of the product.

Using standard grades at shipping points has done much to get farmers acquainted with them and to demonstrate to farmers the desirability of shipping perishables under standards that are recognized all along the line to market. As a result, farmers are learning more and more to sort their produce. They are learning to leave the poorer grades at home. They are learning to ship only the better grades; for which there will be demand at reasonable prices. Keeping the poor stock at home, does much to keep up the tone of the market and stimulate demand. If a market is flooded with poor produce, the customers are likely to lose interest, no matter how low the prices.

Standardization is especially important in cooperative marketing associations. If affords a basis for pooling the products of various growers, so that all can share alike in the season's sales. In the ordinary course of business, it is inevitable that there will be poor sales, damage in transit,

bad accounts, rejections, and allowances. Growers may get the idea the management is showing favoritism if some growers are asked to bear losses while others, through no effort of their own, get the benefit of good sales and prompt settlements. But attempts to pool the products of members without regard to variations in the grade have always been unsuccessful.

Well-graded products make it possible to reduce distribution cost by cutting down waste. For instance, the manufacturer doesn't have to order 10,000 pounds of wool to be sure of getting 5,000 pounds of the quality he needs.

Standardization is also of fundamental importance in such phases of marketing as financing and advertising. Advertising is worse than useless unless backed by uniformly dependable products.

THOMAS: How do standards help in financing a crop?

EXPERT: Well, warehousemen who operate under the U.S. warehous Act are required to use official grades on the warehouse certificates if any grade is designated and if any have been established by the Government for that commodity. You know, the purpose of the warehouse Act is to enable producers to make freer use of receipts as collateral for loans. The banker may be a long way from the warehouse. His only means of learning the value of the products is to have a statement of the quantity and the grade of the product which are to constitute the collateral. If the receipts are to be accepted by the banks on the most favorable terms to the borrower, they must be dependable. The best way to secure dependability is to put responsibility back of the warehouseman, and then require him to conform to recognized standards.

Yes, the Bureau of Agricultural Economics of the Department feels that its standardization work has been one of its most promising and satisfactory lines. It has grown steadily in use and popularity.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Friday, Dec. 23/27

(NOT FOR PUBLICATION)

Livestock and Dairy Meeting No. 12.

SUBJECT: The Dairy Bull.

ANNOUNCEMENT: On Fridays of each week, our farm club, which meets here in the old school house, talks over livestock and dairy problems. See the man over there by the desk? That's the Department of Agriculture man. He's telling the men about the importance of selecting a good, pure-bred dairy sire ---- If you get down closer, you can hear what he has to say ------

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EXPERT: Yes, many a well-established dairy cattle breeding business has gone on the rocks, on account of poor judgment in breeding.

HANKINS: What would you call 'poor judgment'?

EXPERT: Well, Hankins, I'll tell you, the basis of a wise breeding policy is the choice of the bull. Continued success and fame of your dairy cattle depends on your choosing bulls which will sire animals better or at least as good as those that have gone before.

HANKINS: Just how would you select a bull like that?

EXPERT: There are four ways of selecting a bull. First, some folks select by type.-----

HANKINS: You mean they go by the conformation of the bull or on his record in the show ring?

EXPERT: Yes. Now, Second, other breeders select by pedigree, based on the records of the bull's ancestry. The pedigree shows the breeding of the bull and the performance records of his ancestors for several generations. Third, still others select bulls according to a combination of type and pedigree. And Fourth, some breeders select the bull according to the production records of his daughters and their dams.

HANKINS: Which is the best way?

EXPERT: The last mentioned method is the best. Bulls selected by type or by pedigree or by a combination of type and pedigree are mostly young, untried bulls. Whether or not they will build up a successful herd depends on their being able to transmit the desired qualities to their offspring, and this is not known in the case of young bulls. All bulls, you know, do not have the ability to increase the production of the daughters over that of their dams.

Now in dealing with the problem of selecting a bull entirely from the standpoint of milk and butterfat production, you must first of all look for a sire backed by producing ability. The conformation of the bull or his record in the show ring won't tell his ability to transmit high production.

The pedigree gives you the production records of the bull's ancestors, It at least suggests the possibility of similar production from the bull's offspring. Selection by pedigree is universally used by breeders who practic line breeding. But although the pedigree tells a truthful story of the ability of the ancestors, it does not show whether the bull inherits and can transmit the best of its ancestors' traits.

HAWKINS: Then you wouldn't select according to pedigree?

EXPERT: Well, if you have only a limited knowledge of the better strains of the breed; and if you are unable to travel about looking for a bull, I'd say pedigree selection is the best method to follow. However, when you select a bull on pedigree, be sure he is out of a tested dam. More important still than that, is the transmitting ability of the sire of the young bull and the sire of the young bull's dam. If the young bull has any half sisters in milk, you should also consider their records. Study the performance records of all the female ancestors and all the offspring of the male ancestors. Of course, you should give the greatest weight to those in the first and second generation. The further back you go in heredity, the less important is the ancestor. One of the troubles with straight pedigree selection, however, is that it absolutely neglects type.

HAWKINS: Why worry about type? It is production that pays the bills, isn't it?

EXPERT: Yes, that's true. But if you are selling surplus stock animals of good conformation, with nicely balanced udders, are always pleasing to the eye and when sold they'll bring higher prices than their plainer sisters.

HAWKINS: What if I buy a young bull?

EXPERT: If you buy a young bull, you should visit the farm of the owner so you can get a good chance of seeing the sire and dam as well as other individuals of the same family. They will give you some indication of what to expect in the offspring when allowance is made for the type of cows to which the new bull will be mated. That's about as far as you can go in selecting a young bull.

HAWKINS: I've seen poor producers from bulls with good pedigrees; pedigrees that showed high production records.

EXPERT: Yes, and sometimes show bulls produce sons and daughters of poor type as well as poor producing ability. A combination of pedigree and type selection is the best you can do in choosing an improved bull. There is really only one way to select a bull with assurance that high production will be transmitted to hissoffspring. That is by selection of a proved sire.

HANKINS: How do they prove a bull?

EXPERT: "By their fruits ye shall know them". A sire is proved by comparing the records of six or more of his unselected daughters with the records of the dams of those daughters. If his daughters are all better producers than their mothers and if your cows are no better than those in the herd where he has been used, then it is safe to use that bull to head your herd.

HANKINS: But that would mean waiting about three years for proof of a bull's ability.

EXPERT: Yes, just about.

HANKINS: That pretty risky business.

EXPERT: Yes, there is some risk in it. If at the end of that time, the bull is found to transmit low production to his daughters that have been tested, probably his younger daughters also will be low producers. But the matter of choosing a sire is too important not to take the risk.

HANKINS: Selecting proved sires that way takes a lot of study and letter writing and travel, doesn't it?

EXPERT: Often, it does. But the time and expense it takes is a mighty good investment to the breeder who has developed his herd to a high point of efficiency. Failure in the important matter of choosing a bull can undo the constructive work of years.

HANKINS: Then you think we should select proved bulls.

EXPERT: Yes, in case you want the greatest assurance in building up your herd, choose a bull which has proved himself through the performance of his offspring.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

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U. S. RADIO FARM SCHOOL — Mon., Dec. 26/27

Crops and Soils Meeting No. 13.

SUBJECT: When and How to Use Lime.

ANNOUNCEMENT: Yes, our farm club meets here in the school house three times a week. On Mondays we always talk over crop and soil problems. Now today one of our members asked a Department of Agriculture specialist to tell us a few things about liming our crops --- That's what is going on over there now -- some of the men have cornered that expert and are asking him some questions -- Listen! --------

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EXPERT: Well, Scott, the first thing a farmer should do in connection with liming is to get all the information he can on the subject.

SCOTT: Sure. We all realize that. That's why we asked you up here ----- But as far as printed matter is concerned, what would you suggest?

EXPERT: Write the United States Department of Agriculture for their bulletin on the principles of liming the soils. Ask for Farmers' Bulletin No. 921. Or write your State Experiment Station or see the Extension Agent in your county about it.

SCOTT: When would you lime the soil?

EXPERT: If your soil needs lime, it is better to apply it any time than not at all.

SCOTT: But there must be a best time to put on the lime.

EXPERT: Of course. But that will depend on the kind of liming material you use, and the time and facilities you have for applying it. You know, there are two kinds of liming material. There is lime carbonate; represented by pulverized limestone, ground oyster shells, and marl. Then there is lime oxide represented by burned or quick lime and hydrated lime. The best time to apply the lime depends on which of the two classes of liming material you use. With some precautions, ground limestone may be applied any time. In that respect, it is better than the slaked lime class of material. With the ground limestone, ground oyster shells, and marl you can do your liming at your own convenience. You can make it a spare time job.

SCOTT: Pulverized limestone won't damage the crop either, will it?

EXPERT: No. You can use it at any time without danger of any burning effect on seeds of young plants. So you see, if it is convenient, you put the lime on the soil at seeding time or on young grass or other growing crops. Of course, you would put it on a growing crop while the plants are small, and when the ground is firm. Otherwise, you might do some damage with the wagon, truck spreader, or whatever you used for applying the lime.

Now in using liming material of the other kind, quick or burned lump lime is nearly always slaked with water before applying or lime hydrate may be used.

SCOTT: What's lime hydrate?

EXPERT: Simply burned lime that has been slaked by the manufacturer.

SCOTT: Does that lime hydrate hurt growing plants?

EXPERT: Yes, lime hydrate may seriously injure seeds and young growing plants with which it comes in contact. Never use lime hydrate on young plants. If used at seeding time it should be worked into the soil as the seed bed is being prepared and not permitted to come in direct contact with the seed. There is another objection to applying hydrated lime in the fall or winter. Hydrated lime is very fine and tends to form milk of lime. If you put it on hillsides or sloping fields or anywhere there is surface wash, the rains might wash much of it away.

SCOTT: Then you wouldn't use slaked lime?

EXPERT: Oh yes, but I would apply it in the spring a short time before planting or seeding and disc or harrow it into the surface of the soil.

SCOTT: How often would you use lime? Would you put it on every year or put on more and just do it once in three or four years?

EXPERT: That depends on conditions. It depends on the kind of liming material and the crop or rotation you are using. You want to keep in mind, the loss from leaching through several years. If you make a big application of hydrated lime, which is a finely divided powder, or if you use finely pulverized limestone, there must be considerable loss when rainfall is normal. That is particularly true on light soils such as we have in the South.

On the other hand, if you use ground limestone in which there is enough fine material to produce an immediate effect and the balance is coarse particles, you can make a heavy application that will last for several years. The coarse particles being more slowly soluble will stay in the soil for a longer time. In case you have a leguminous crop that needs lime as part of a

rotation, it would probably be better to make a moderate application of lime especially for that crop. Also moderate applications for other crops of the rotation if it is found that lime is needed.

SCOTT: What's the best way to spread the lime?

EXPERT: Well, there are several ways used. Some farmers put burned or lump lime in piles in the field, slake it with water, and then spread it by hand. But I wouldn't recommend that to you, if you can avoid it. It is a hard and disagreeable job. Other farmers spread the liming material by hand from a wagon or truck. That is also a lot of disagreeable work. The most efficient way to distribute the lime is by a lime spreader. That may involve what seems like a useless outlay, but you will probably find it most economical in the end.

However, if the material is uniformly fine so as not to clog the machine, you can use a grain drill to distribute light applications of lime on soil that has recently been plowed. Or you might adapt your manure spreader for lime spreading by placing some manure or similar material on the bottom. When it comes to applying lime, there are three things I want you all to keep in mind.

SCOTT: Let's have them.

EXPERT: First, do not expose liming material, especially the burned and hydrated forms to the weather, until it is convenient to apply it.

SCOTT: All right. We'll remember to keep it in a bin out of the weather. What's next?

EXPERT: Second, you should distribute liming material as uniformly as possible.

SCOTT: It's pretty hard to get an even distribution by hand.

EXPERT: Yes, that is one of the objections to hand spreading.

SCOTT: Well, suppose we keep the lime out of the weather, and then when we do spread it, get an even spread; what then?

EXPERT: The third thing I want you to remember is to handle the liming material as few times as possible. Labor and time mean money, don't forget that.

SCOTT: You told us that if we used pulverized limestone, ground oyster shells, or marl, we could use spare time for liming -- lime any time.

EXPERT: So I did. But even though you lime in your spare time, it is poor business to overlook the factor of handling the material in increasing your cost of production. Handle the lime as few times as possible.

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U. S. RADIO FARM SCHOOL — Wed. Dec. 28.

(NOT FOR PUBLICATION)

Farm Economics Meeting No. 13.

SUBJECT: Inspection in Marketing.

ANNOUNCEMENT: Have you been taking in our farm club meetings on marketing? Week before last the Department of Agriculture man explained the new idea in marketing. Last week some of our members here brought up the question of standards for farm products. Now, that bunch down front there has started discussing the Federal and Federal-State inspection services --- Come on! Let's edge down closer and hear what they are saying --------

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EXPERT: Sure. They have government inspection service for farm products at both shipping points and receiving markets. Why, during the past year there were 193,220 cars of fruits and vegetables inspected at shipping points in forty States.

HENRY: Do they inspect your stuff whether you want it inspected or not?

EXPERT: No. It's mostly voluntary. Most of the shipping point inspection is done in cooperation with the States. Of course, you know, there is compulsory inspection of grain in interstate commerce, provided by the Grain Standards Act; but this fruits and vegetables inspection is voluntary. Most of it is done in cooperation with the States. According to the agreements, the Federal government licenses and supervises State men who do the standardization and inspection work.

Similar voluntary inspection service is available now on hay, butter, poultry, eggs, broomcorn, beans, and soy beans.

HENRY: I noticed an inspection certificate in a pound of butter we bought the other day.

EXPERT: Yes. That's the government assurance of quality to the consumer. Butter inspection service is in effect in Minnesota in cooperation with the Minnesota State Department of Agriculture. More than 80,000,000 pounds of butter were inspected last year. That butter inspection has made a big improvement in the quality of butter manufactured by more than 400 creameries. The percentage of 93 score butter increased from 33 per cent. In February 1925 only one-third of the butter that was inspected graded as high as 93 score butter. In Feb. 1927, more than two-thirds graded that high. The percentage of high score butter has doubled in two years, you see.

HENRY: You say the government has a hay inspection organization, too?

EXPERT: Yes. The hay inspection organization now numbers nearly 100 licensed inspectors. Establishment of hay grades led to a demand for inspection on the basis of the grades. More than 17,000 inspections were made during the past year. Similar results have gone along with the establishment of inspection services on broomcorn, beans, and soy beans. The meat grading and stamping service, whereby carcass beef grading "Prime" and "Choice" may be stamped by Government inspectors is in an experimental stage, but is finding approval by a large part of the trade.

HENRY: I saw some time back that the government's poultry and egg inspection service has been expanded recently in California and Missouri.

EXPERT: Yes. The service has been extended to a number of additional shipping points in both States. Four firms in San Francisco and one in New York have been authorized to use certificates of quality for U.S. No. 1 extras (retail grade) on their carton eggs. During the spring of this year, more than 500 inspections of eggs were made a month in New York. A cold-storage warehouse at Philadelphia also has used the inspection service to find out the quality of eggs offered for storage, so loans could be made with their warehouse certificates as collateral.

Another recent development is the establishment of an inspection service on live poultry in New York City in cooperation with the New York Live Poultry Commission Merchants' Association and the Greater New York Live Poultry Chamber of Commerce. That inspection service uses a supervising inspector and 12 licensed inspectors. Six of the inspectors are qualified veterinarians. Those inspectors will have to examine nearly 12,000 carloads of poultry a year. It is also planned to extend the inspection work on poultry to include dressed poultry.

HENRY: This inspection of farm products is all pretty new, isn't it?

EXPERT: Well, the inspection service of the Department of Agriculture was established as a war emergency service in November 1917. The object was to protect producers against unfair rejections by receivers; and to get quick adjustment of disputes so as to hasten the unloading of cars so they could be used again promptly; and to prevent the waste of food that goes with delays in handling, which result from differences between shippers and receivers. At first the service was limited to the inspection of fruits and vegetables at receiving markets. It proved of such value in marketing that Congress gave authority to continue it after the war. In July 1922 the service was extended to inspections at shipping points, so that shippers could correct improper grading practices while they still had the products in their hands rather than wait until they reached the market.

HENRY: The government uses the inspection service in buying for the army and navy, doesn't it?

EXPERT: Yes. The army, the navy, the government hospitals, and the laid-up fleet have all used the service. Commercial steamship lines, chain stores and restaurants have also been using it. Fact is, the demands of these agencies for Government inspection to assure the quality of the things they buy often taxes

the inspection service to the straining point. They say, too, inspection has cut down the former crooked practices and that hundreds of thousands of dollars have been saved by it.

HENRY: What good does this inspection service on farm products do the farmer?

EXPERT: The experience of the Department of Agriculture is that its inspection service has improved marketing conditions.

HENRY: How so?

EXPERT: Why, by preventing unfair practices and bringing about better understandings between shippers and receivers. It has become an effective means for promoting better grading and packing methods. Farmers now get an official, unbiased statement as to whether or not they have fulfilled their part of the contract. Receivers see the advantages in handling only standardized products. That has meant the more consistent use of the old established grades and the quicker adoption of newly recommended Federal grades for many farm products.

Not only that, but shipping-point and receiving-point inspection made on the same cars is teaching us what happens to products in transit. The quick changes in condition of highly perishable products have caused many misunderstandings between shippers and receivers in the past. Dependable information as to the effects of a small quantity of off-condition stock on the carrying qualities of a lot as a whole has resulted in getting rid of the bad quality stock at shipping points.

Until growers and shippers received authoritative statements through Federal inspection certificates, they did not realize fully, from a marketing standpoint, the serious nature of such diseases as late blight of potatoes, brown rot of peaches, or blue mold rot of citrus and deciduous fruits. Continued reports of losses from these and similar diseases have resulted in more efficiency in applying preventive methods developed by State and Federal research organizations. Yes, this inspection service has been a vital factor in improving marketing practices and in bringing about more efficient methods of merchandising farm products during the last ten year.

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U. S. RADIO FARM SCHOOL Fri. Dec. 30,1927.

(NOT FOR PUBLICATION)

Livestock and Dairy Meeting No. 13.

SUBJECT: Livestock Sanitation.

ANNOUNCEMENT: This is livestock day in our farm club. Each Friday we meet here in the school-house and talk over either livestock or dairy problems. That bunch of men over there with the Department of Agriculture expert are talking livestock sanitation now. Go on over there, where you can hear what they have to say.

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EXPERT: Yes, most of the internal parasites that affect livestock are transmitted from one animal to another through the manure, either directly or indirectly.

HENDERSON: How can you kill off the parasite eggs and grubs in barnyard manure?

EXPERT: Well, Henderson, we don't yet know much about how to get rid of parasite eggs and grub in manure by chemical treatment----

HENDERSON: But there must at least be some way of disposing of the manure so it will do the least harm?

EXPERT: Oh,yes. That's important in keeping down parasites of livestock. We know enough along that line to help a good bit.

HENDERSON: What would you recommend?

EXPERT: Briefly, you should put barn-yard manure of one kind of stock on fields that will be used to pasture a different kind of stock.

HENDERSON: What's the idea.

EXPERT: Why, Horse parasites, for instance, don't affect cattle or sheep. Parasites from cattle and sheep and goats, on the other hand, don't trouble horses. It's the same way with hog parasites. Hog parasites are not transmissible to horses, or sheep and cattle. Parasites from horses or sheep and cattle are not transmissible to swine.

HENDERSON: Then you would use horse manure on pastures intended for cattle or sheep. And you would use hog manure for horse and cattle and sheep pastures.

EXPERT: Exactly.

HENDERSON: But suppose you dont't keep but one kind of livestock?

EXPERT: On farms where only one kind of stock is used, you should plow the barnyard manure under. Never throw it back on pastures where it will contaminate the food of grazing stock.

HENDERSON: How about the manure left on the pastures? Don't permanent pastures also perpetuate parasites?

EXPERT: Unquestionably. If one pasture has the same kind of stock on it year after year, it becomes infested with the eggs and grubs of the parasites of that stock. The result is young animals pick up the parasites, become infested with large numbers of parasites. That makes them unthrifty or stunts their growth.

HENDERSON: How would you keep down infestation from permanent pastures, then?

EXPERT: Why, you can avoid considerable loss due to parasitism by rotating stock on the pastures; so that horses will follow sheep or cattle or swine and vice versa.

HENDERSON: Would you follow cattle with sheep or sheep with cattle?

EXPERT: By no means. Cattle, sheep, and goats have in several instances the same kind of parasites; so you see rotation of cattle, sheep and goats with one another is bad practice. And let me emphasize to you, to protect your young animals. Young animals are more susceptible to parasites and suffer more from the effects of parasitism than older animals. For that reason, you should give special attention to livestock sanitation for young animals in order to tide them over the critical period of their early lives. You will find such special precautions will pay. They will reduce infant mortality among your animals and will tend to reduce the number of worthless runts. That has been demonstrated in the case of the control of the large intestinal roundworm of swine.

HENDERSON: How do they do it?

EXPERT: Well, essentially the method consists in washing the sow shortly before farrowing, providing her with a clean, sanitary farrowing pen, and then protecting the young pigs from barnyard manure and from older animals other than their mothers by putting them in a clean pasture that has been sown to a suitable forage crop.

HENDERSON: And that keeps the pigs from getting roundworms?

EXPERT: Yes. It not only reduces roundworm infestation but it will also reduce infestation with other parasites as well as certain infections not due to parasites.

HENDERSON: I've heard that some parasites don't go directly from one head of livestock to another, but have to spend part of their lives in insects or some other animal before they can live in livestock.

EXPERT: Yes, a well-known example of that is the liver fluke of cattle, sheep, and goats. The early stages of its life are spent in certain species of snails.

Horse stomach worms pass their early lives in the bodies of certain species of flies that breed in horse manure and straw.

HENDERSON: How do you get at them? How do you kill off that kind of parasite?

EXPERT: Usually in that case, we go after the intermediate host. If possible, we destroy the lower species of animal in which the parasite spends those early stages of its life. A good illustration of the control of a parasitic disease by destroying a lower species of host animal is that of Texas fever. The Texas fever is transmitted to the cattle by a certain species of tick. The ticks are now being killed throughout the South by dipping cattle in arsenical dips. This killing of the ticks is fast wiping out the Texas fever of cattle in this country.

But it is not only lower animals and animals of the same kind that are sources of danger for your livestock. Cattle, sheep, goats, and swine may swallow tapeworm eggs from human beings. The so-called "measles" in swine and cattle are acquired from human beings. Dogs infested with tape worms are another source of infection.

HENDERSON: How would you prevent that?

EXPERT: By improved sanitation. See that the food and water of livestock are kept free from contamination. Keep stray dogs away from premises where livestock is kept. Consult a veterinarian from time to time about the treatment for tapeworms in dogs kept about the premises. Livestock sanitation will not only aid in controlling parasitic diseases but may also help control certain other manure-borne and filth-carried diseases. Remember, the principles involved in livestock sanitation are the same as those that are being successfully applied to the control of human parasites and diseases in many parts of the world.

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